New York CAPS Orchard Commodity Survey Targets
2015 Summary/Final Report

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Introduction

An Orchard Commodity Cooperative Agricultural Pest Survey was conducted for exotic insects and diseases including light brown apple moth (LBM), cherry bark tortrix (CBT), summer fruit tortrix moth (SFT), variegated golden tortrix (VGT) and apple proliferation phytoplasma (APP). Because of the potential spread of streptomycin-resistant fire blight in NY following its discovery in 2011, we also monitored for this disease. All the agricultural pests in the survey pose significant threats to NY fruit industries.

Objectives

1. Monitor and scout for the target species in apple and cherry orchards throughout the growing season of 2015 and submit suspect samples for determination.

Methods & Results

We adjusted the USDA APHIS written protocols for NY orchard and growing season conditions. We monitored for six insects and diseases (Table 1), five of which were exotic pests not found in the Northeastern US. Fire blight was added to our survey efforts because streptomycin resistance in the pathogen had been identified in 2011 in NY. Art Agnello, Department of Entomology, Cornell University, collaborated in the survey monitoring insect traps for LBM, CBT, SFT and VGT at six sites, 2 traps/site.

Table 1. The insects and diseases in the survey included those listed with the number of traps in each orchard site. Diseases were scouted and traps were serviced weekly.

Insect or Disease	Abbr.	Scientific name	Traps/Site
light brown apple moth	LBM	*Epiphyas postvittana*	2 or 4
cherry bark tortrix moth	CBT	*Enarmonia formosana*	2 or 4
summer fruit tortrix moth	SFT	*Adoxophyes orana*	2 or 4
variegated golden tortrix	VGT	*Archips xylosteanus*	2 or 4
apple proliferation phytoplasma	APP	*Candidatus* Phytoplasma mali	na[1]
streptomycin resistant fire blight	SmR Ea	*Erwinia amylovora*	na

[1]na=Not applicable

Traps for LBM, CBT and SFT were set out in late June, those for VGT in early July. Traps were serviced weekly until late September. Lures were replaced at the specified intervals. Where possible, CBT traps were placed in cherry orchards, alternatively in apple orchards if no cherries were grown on the farm (Table 2).

We scouted for diseases at weekly intervals during appropriate times of the season, June to July for fire blight and August to September for APP. Each week for the visual survey for diseases a different block of fruit trees on each farm was scouted for diseases with input from the farmers in case fire blight or other odd symptoms had been noted on the farms. Approximately 20 trees were examined for either fire blight or APP each week, by walking between rows and stopping ten times, every 60 ft., to inspect two trees in each row for disease symptoms. The varieties scouted included,

but were not limited to, Acey Mac, Aztec Fuji, Gala, Galaxy Gala, Ginger Gold, Greening, Honeycrisp, Jonagold, McIntosh, NY1 (SnapDragon), NY2 (Ruby Frost), and Twenty Ounce.

Surveys were conducted in 13 orchard locations, including one location, an apple nursery in which only diseases were scouted, Table 2. In the nursery, entire blocks of 3200 trees were scouted each week.

Table 2. The County and crops surveyed in the 13 orchard sites. Traps were serviced and diseases scouted at weekly intervals.

County	Crops
Monroe	apple & cherry
Schuyler	apple
Cayuga	apple & cherry
Onondaga	apple & cherry
Wayne	apple & cherry
Wayne	apple & cherry
Wayne	apple & cherry
Wayne	apple & cherry
Wayne	apple & cherry
Wayne	apple
Wayne	apple
Wayne	apple
Wayne	apple

*only disease scouting at this location

**no fire blight scouting at this location

Suspect specimens were brought back to our labs for pre-screening. Pre-screened suspect specimens of LBM, CBT, SFT or VGT were sent to Jason Dombroskie, Dept. of Entomology, Cornell University for determinations. Fire blight samples collected were analyzed by Kerik Cox, Dept. of Plant Pathology and Plant-Microbe Biology, Cornell University.

A total of 144 traps were monitored, evenly divided among the four insect species, and checked 9 to 13 times during the season. No quarantine pests, LBM, CBT, SFT, or VGT, were uncovered by the survey, out of 171, 119, 82, and 1051 moths trapped in the respective traps. The low number of non-target species indicates the pheromone lures used are very specific to the target species being surveyed.

For the APP survey, 26,470 trees were examined, including approximately 25,600 in the nursery. No APP suspect symptoms were observed.

Fire blight was scouted on 55,680 trees and 20 samples collected and *Erwinia amylovora* was recovered from 17. No streptomycin-resistant fire blight isolates were identified in any of the collected fire blight samples.